

# NNHH-65B-R4



8-Port sector antenna, 4x 698-896 and 4x 1695-2360 MHz, 65° HPBW, 4x RETs

- Array configuration provides capability for 4T4R (4x MIMO) on Low band and High band
- Optimized SPR performance across all operating bands
- Excellent wind loading characteristics

## General Specifications

<b>Antenna Type</b>	Sector
<b>Band</b>	Multiband
<b>Color</b>	Light Gray (RAL 7035)
<b>Grounding Type</b>	RF connector inner conductor and body grounded to reflector and mounting bracket
<b>Performance Note</b>	Outdoor usage
<b>Radome Material</b>	Fiberglass, UV resistant
<b>Radiator Material</b>	Aluminum   Low loss circuit board
<b>Reflector Material</b>	Aluminum
<b>RF Connector Interface</b>	4.3-10 Female
<b>RF Connector Location</b>	Bottom
<b>RF Connector Quantity, high band</b>	4
<b>RF Connector Quantity, mid band</b>	0
<b>RF Connector Quantity, low band</b>	4
<b>RF Connector Quantity, total</b>	8

## Remote Electrical Tilt (RET) Information

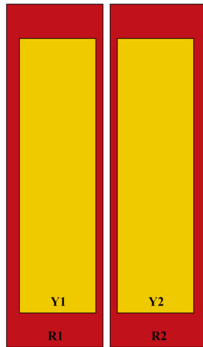
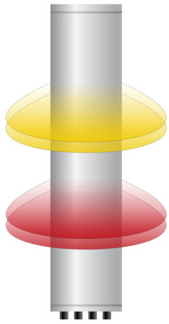
<b>RET Hardware</b>	CommRET v2
<b>RET Interface</b>	8-pin DIN Female   8-pin DIN Male
<b>RET Interface, quantity</b>	1 female   1 male
<b>Input Voltage</b>	10–30 Vdc
<b>Internal RET</b>	High band (2)   Low band (2)
<b>Power Consumption, active state, maximum</b>	10 W
<b>Power Consumption, idle state, maximum</b>	2 W
<b>Protocol</b>	3GPP/AISG 2.0 (Single RET)

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## Dimensions

<b>Width</b>	498 mm   19.606 in
<b>Depth</b>	197 mm   7.756 in
<b>Length</b>	1828 mm   71.969 in
<b>Net Weight, antenna only</b>	31 kg   68.343 lb

## Array Layout



Array ID	Frequency (MHz)	RF Connector	RET (MRET)	AISG No.	AISG RET UID
R1	698-896	1 - 2	1	AISG1	CPxxxxxxxxxxxxMM.1
R2	698-896	3 - 4	2	AISG1	CPxxxxxxxxxxxxMM.2
Y1	1695-2360	5 - 6	3	AISG1	CPxxxxxxxxxxxxMM.3
Y2	1695-2360	7 - 8	4	AISG1	CPxxxxxxxxxxxxMM.4

(Sizes of colored boxes are not true depictions of array sizes)

## Port Configuration



## Electrical Specifications

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<b>Impedance</b>	50 ohm
<b>Operating Frequency Band</b>	1695 – 2360 MHz   698 – 896 MHz
<b>Polarization</b>	±45°
<b>Total Input Power, maximum</b>	900 W @ 50 °C

## Electrical Specifications

	<b>R1,R2</b>	<b>R1,R2</b>	<b>Y1,Y2</b>	<b>Y1,Y2</b>	<b>Y1,Y2</b>	<b>Y1,Y2</b>
<b>Frequency Band, MHz</b>	<b>698–806</b>	<b>806–896</b>	<b>1695–1880</b>	<b>1850–1990</b>	<b>1920–2180</b>	<b>2300–2360</b>
<b>RF Port</b>	1,2,3,4	1,2,3,4	5,6,7,8	5,6,7,8	5,6,7,8	5,6,7,8
<b>Gain, dBi</b>	14.8	15.5	17.1	17.6	18	18.1
<b>Beamwidth, Horizontal, degrees</b>	68	59	63	60	62	62
<b>Beamwidth, Vertical, degrees</b>	12	10.6	7	6.5	6.1	5.5
<b>Beam Tilt, degrees</b>	2–14	2–14	2–12	2–12	2–12	2–12
<b>USLS (First Lobe), dB</b>	19	17	15	16	16	17
<b>Front-to-Back Ratio at 180°, dB</b>	29	27	35	35	34	33
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	21	21	30	31	29	26
<b>Isolation, Cross Polarization, dB</b>	25	25	25	25	25	25
<b>Isolation, Inter-band, dB</b>	25	25	25	25	25	25
<b>VSWR   Return loss, dB</b>	1.5  14.0	1.5  14.0	1.5  14.0	1.5  14.0	1.5  14.0	1.5  14.0
<b>PIM, 3rd Order, 2 x 20 W, dBc</b>	-150	-150	-150	-150	-150	-150
<b>Input Power per Port at 50°C, maximum, watts</b>	300	300	250	250	250	200

## Mechanical Specifications

<b>Wind Loading @ Velocity, frontal</b>	622.0 N @ 150 km/h (139.8 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, lateral</b>	188.0 N @ 150 km/h (42.3 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, maximum</b>	746.0 N @ 150 km/h (167.7 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, rear</b>	428.0 N @ 150 km/h (96.2 lbf @ 150 km/h)
<b>Wind Speed, maximum</b>	241.4 km/h (150 mph)

## Packaging and Weights

<b>Width, packed</b>	565 mm   22.244 in
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<b>Depth, packed</b>	309 mm   12.165 in
<b>Length, packed</b>	2015 mm   79.331 in
<b>Weight, gross</b>	42.1 kg   92.815 lb

## Regulatory Compliance/Certifications

<b>Agency</b>	<b>Classification</b>
CHINA-ROHS	Above maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
ROHS	Compliant/Exempted
UK-ROHS	Compliant/Exempted



## Included Products

BSAMNT-2F	-	Mounting bracket for cylindrical pipe installations (60-115mm pipe diameter) for fix mechanical tilt applications.
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## \* Footnotes

<b>Performance Note</b>	Severe environmental conditions may degrade optimum performance
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